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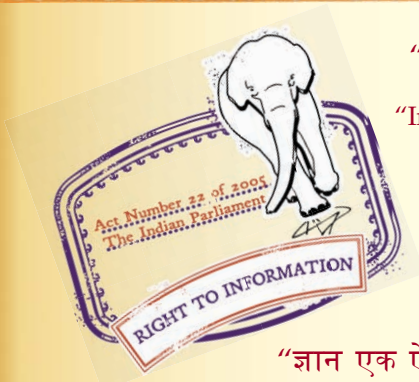
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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8271-5-10 (1989): Quartz Crystal Units Used for Frequency Control and Selection, Part 5: Series Cx for Oscillators, Section 10: Quartz Crystal Unit Type CX-10 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Satyanarayan Gangaram Pitroda

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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

**QUARTZ CRYSTAL UNITS
USED FOR FREQUENCY CONTROL
AND SELECTION — SPECIFICATION**

PART 5 SERIES CX FOR OSCILLATORS

Section 10 Quartz Crystal Unit Type CX-10

भारतीय मानक

आवृत्ति नियंत्रण और चयन में प्रयुक्त क्वार्ट्ज क्रिस्टल इकाइयाँ — विशिष्टि

भाग 5 दोलकों के लिये सी एक्स श्रेणी

अनुभाग 10 क्वार्ट्ज क्रिस्टल इकाई टाईप सी एक्स-10

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FOREWORD

This Indian Standard (Part 5/Sec 10) was adopted by the Bureau of Indian Standards on 17 March 1989, after the draft finalized by the Piezoelectric Devices for Frequency Control and Selection Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

This standard shall be read in conjunction with IS 8271 (Part 1) : 1981 'Specification for quartz crystal units used for frequency control and selection : Part 1 General requirements and tests (*first revision*)'.

This standard is based on JSS 50909 (1971) 'Detail specification for crystal unit, quartz, styles QC-29, QC-30, QC-31, QC-32, QC-33, QC-34 and QC-35', issued by the Directorate of Standardization, Ministry of Defence, India. The type of quartz crystal unit covered in this standard is equivalent to style QC-33 of JSS 50909 (1971).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION — SPECIFICATION

PART 5 SERIES CX FOR OSCILLATORS

Section 10 Quartz Crystal Unit Type CX-10

1 SCOPE

1.1 This standard (Part 5/Sec 10) specifies detail requirements for the characteristics of quartz crystal unit Type CX-10 used for frequency control and selection in oscillators.

2 REFERENCES

2.1 The following Indian Standards have been referred to in this standard:

IS No.	Title
IS 4570 (Part 6) : 1984	Specification for crystal unit holders: Part 6 Metal, solder seal, two-pin, crystal unit holder, Type CX
IS 8271 (Part 1) : 1981	Specification for quartz crystal units used for frequency control and selection : Part 1 General requirements and tests (<i>first revision</i>)

3 OUTLINE AND DIMENSIONS

3.1 Holder outline shall conform to Type CX [*see* IS 4570 (Part 6) : 1984].

4 MARKING

4.1 *See* 8 of IS 8271 (Part 1) : 1981.

5 CONSTRUCTION AND WORKMANSHIP

5.1 *See* 7 of IS 8271 (Part 1) : 1981.

6 TEST SCHEDULE AND DETAIL REQUIREMENTS

6.1 General Conditions for Test

See 9.2 of IS 8271 (Part 1) : 1981.

6.2 Test Schedule

The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS 8271 (Part 1) : 1981.

6.3 Detail Requirements

The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

Table 1 Detail Requirements of Quartz Crystal Unit Type CX-10
(*Clause 6.3*)

Characteristic	Requirement
a) Type of holder	CX (<i>see</i> 1)
b) Frequency range	17 to 61 MHz
c) Frequency tolerance:	
1) Operating temperature range	± 20 ppm
2) Room temperature	± 80 ppm
d) Frequency stability	± 5 ppm
e) Load capacitance	Infinity
f) Mode of oscillation	Third mechanical overtone
g) Reference temperature	$85 \pm 1^\circ\text{C}$
h) Temperature range:	
1) Operating	80°C
2) Operable	-55 to 80°C
j) Test set, calibration values and rated drive level	<i>See</i> Table 2
k) Capacitance shunt	7 pF, <i>Max</i>
m) Resonance resistance	40 ohms, <i>Max</i>
n) Shock [As in 9.15 (severity A) of IS 8271 (Part 1) : 1981]:	
1) Frequency change permitted	± 5 ppm
2) Resonance resistance change permitted	± 10 percent
p) Vibration [As in 9.16.1 (Severity A) of IS 8271 (Part 1) : 1981]:	
1) Frequency change permitted	± 5 ppm
2) Resonance resistance change permitted	± 10 percent
q) Ageing:	
Frequency change permitted	5 ppm

Table 2 Test Set, Calibration Values and Rated Drive Level
[Table 1 (j)]

Frequency Range	Calibration Values		Rated Drive Level	Test Set
	Resistance	Resistor Voltage Drop		
MHz	ohms	volt	mW	
(1)	(2)	(3)	(4)	(5)
17 to 25	40	0.28	2.0 ± 0.4	TS-683/TSM
>25 up to 61	40	0.20	1.0 ± 0.2	

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